IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	Docket No.: **TI-32891**
Carl M. Panasik	Examiner: **Perez, Angelica**
Serial No.: **09/887,778**	Art Unit: **2684**
Filed: **06/22/2001**	Confirm. No.: **8711**

For: **CELLULAR HANDSET TRANSCEIVER SYSTEM FOR MINIMAL POWER CONSUMPTION**

APPEAL BRIEF – 37 C.F.R. § 1.192(c)

Commissioner for Patents
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is submitted in connection with the above-identified application in response to the final Office Action mailed March 11, 2008.

I. REAL PARTY IN INTEREST

Texas Instruments Incorporated is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals and interferences.

III. STATUS OF CLAIMS

Final rejection of Claims 1-31 was made by the Examiner in the Office Action dated March 11, 2008. Claims 1-31 are on appeal. Claims 1-31 are reproduced in the Appendix to Appellants' Brief filed herewith.

IV. STATUS OF AMENDMENTS

An Amendment 37 CFR § 1.111 mailed by Appellants on December 13, 2007 was entered. No amendment was submitted in response to the Final rejection of March 11, 2008.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

A system and method of wireless data communication between a base station and a mobile station employs mobile receiver and computing algorithms to cause the mobile station transmitter to selectively enter a low power or idle transmission mode when the mobile station is in a shadow of the base station such that wasted RF and DC power is avoided in poor propagation situations. Cellular handset battery power is thus conserved to extend CDMA handset talk time.

More specifically, independent Claim 1 requires and positively recites, a method (page 5, lines 14-16) of data communication between a base station and a mobile station over a wireless communication network (page 4, lines 7-8; Figs. 5-7), the method comprising the steps of:

transmitting data signals between a mobile station and a base station (page 4, lines 8, 10 and 23);

monitoring the data signals received by the mobile station from the base station (page 5, line 16); and

disabling the ability of the mobile station to transmit data signals to, while (page 5, line 21) maintaining the ability of the mobile station to receive data signals (page 5, lines 21-11) from, the base station when the mobile station is in a shadow of the base station (page 5, line 18).

Independent Claim 10 requires and positively recites, a method of data communication between a base station and a mobile station over a wireless communication network (page 4, lines 7-8; Figs. 5-7), the method comprising the steps of:

transmitting data signals between a mobile station and a base station (page 4, lines 8, 10 and 23);

monitoring the signal to noise ratio (SNR) of the data signals received by the mobile station from the base station to provide a determination whether the mobile station is in a shadow of the base station (page 5, lines 16-19); and

disabling transmission of data signals from and maintaining reception of data signals by the mobile station when the mobile station is in a shadow of the base station (page 5, line 21).

Independent Claim 16 requires and positively recites, a method of data communication between a base station and a mobile station over a wireless communication network (page 4, lines 7-8; Figs. 5-7), the method comprising the steps of:

transmitting data signals between a mobile station and a base station (page 4, lines 8, 10 and 23);

transmitting a signal from the base station to the mobile station that indicates a loss of at least one primary base station rake finger (page 6, lines 3-4) to provide a determination (page 6, lines 1-4) that the mobile station is in a shadow of the base station; and

disabling transmission (page 5, line 21) of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals (page 5, lines 21-22) when the mobile station is in a shadow of the base station.

Independent Claim 22 requires and positively recites a method (page 5, lines 14-16) of data communication between a base station and a mobile station over a wireless communication network (page 4, lines 7-8; Figs. 5-7), the method comprising the steps of:

transmitting data signals between a mobile station and a base station (page 4, lines 8, 10 and 23);

monitoring the data signals received by the mobile station from the base station (page 5, line 16);

detecting an abrupt change in signal delay (page 6, lines 4-6) received by the mobile station from the base station to provide an indication of whether the mobile station is in a shadow of (page 6, lines 6-7) the base station; and

disabling transmission of the data signals by the mobile station (page 5, line 21), while maintaining the ability of the mobile station to receive data signals (page 5, lines 21-22) transmitted by the base station, when the mobile station is in a shadow of the base station (page 5, line 18).

Independent Claim 28 requires and positively recites a method of power management (page 5, lines 15-16) in a wireless communication transceiver comprising the steps of:

monitoring data signal quality received by the transceiver (page 5, line 16); and

disabling the ability of the transceiver to transmit data signals (page 5, line 21), while maintaining the ability of the transceiver to receive data signals when the received signal quality falls below a pre-determined threshold (page 5, lines 16-19).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1) Are Claims 1, 2, 10 and 28-31 patentable under 35 U.S.C. 102(e) over Chang, Shih-Jeh (Chang, US Patent No.: 6,188,890)?

2) Are Claims 3, 5-8, 11-14 and 16-20 patentable under 35 U.S.C. 103(a) over Chang, Shih-Jeh (U.S. 6,188,890) in view of Rainish et al. (Rainish et al., US 6,606,490)?

3) Are Claims 4 and 22 patentable under 35 U.S.C. 103(a) over Chang, Shih-Jeh (U.S. 6,188,890) in view of Kido, Toru (Kido, US 005977881A)?

4) Are Claims 23-26 patentable under 35 U.S.C. 103(a) over Chang, Shih-Jeh (U.S. 6,188,890) in view of Kido, Toru (Kido, US 005977881A) and further in view of Rainish?

5) Are Claims 9, 15 and 21 patentable under 35 U.S.C. 103(a) over Chang, Shih-Jeh (U.S. 6,188,890) in view of Bergins?

6) Is Claim 27 patentable under 35 U.S.C. 103(a) over Chang, Shih-Jeh (U.S. 6,188,890) in view of Kido and further in view of Bergins?

VII. ARGUMENTS

1) Claims 1, 2, 10 and 28-31 stand rejected under 35 U.S.C. 102(e) as being anticipated by Chang, Shih-Jeh (Chang, US Patent No.: 6,188,890). Appellants respectfully traverse this rejection, as set forth below.

In order that the rejection of Claims 1, 2, 10 and 28-31 be sustainable, it is fundamental that "each and every element as set forth in the claim be found, either expressly or inherently described, in a single prior art reference." Verdegall Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), where the court states, "The identical invention must be shown in as complete detail as is contained in the ... claim".

Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Claim 1 requires and positively a method of data communication between a base station and a mobile station over a wireless communication network, the method

comprising the steps of: "transmitting data signals between a mobile station and a base station", "monitoring the **data signals received by the mobile station from the base station**" and "**disabling the ability of the mobile station to transmit data signals** to, while maintaining the ability of the mobile station to receive data signals from, the base station when the mobile station is in a shadow of the base station".

Claim 10 requires and positively recites, a method of data communication between a base station and a mobile station over a wireless communication network, the method comprising the steps of: "transmitting data signals between a mobile station and a base station", "monitoring the signal to noise ratio (SNR) of the **data signals received by the mobile station from the base station** to provide a determination whether the mobile station is in a shadow of the base station" and "**disabling transmission of data signals from** and maintaining reception of data signals by **the mobile station** when the mobile station is in a shadow of the base station".

Claim 28 requires and positively recites, a method of power management in a wireless communication transceiver comprising the steps of: "monitoring data signal quality **received by the transceiver**" and "**disabling the ability of the transceiver to transmit data signals**, while maintaining the ability of the transceiver to receive data signals when the received signal quality falls below a pre-determined threshold".

In contrast, Chang teaches "estimating when a wireless terminal is in a fade by monitoring at the base station the signal quality of the signal transmitted by the wireless terminal (column 2, lines 43-45). Further, Examiner's premise (Office Action dated March 11, 2008, page 2, lines 14-17) that Chang asserts, "if the wireless terminal is having difficulty receiving a signal from the base station because it is in a fade, the base

station will perceive a similar difficulty in receiving a signal from the wireless terminal", is simply false. Examiner assumes that the cellular system is a balanced system in which all receivers are equal – but this is false. Base stations have much more sophisticated receivers than mobile stations and are more sensitive by at least a factor of two. Hence a base station will continue to hear a mobile station well after the mobile station loses the signal from the base station. Accordingly, Chang teaches determining the loss of signal at the base station and then inferring that the mobile also has a received signal below threshold.

The above is in direct contrast to embodiments of the present invention which teach, "monitoring the data signal received by the (mobile) transceiver". As such, Chang fails to teach or suggest, "monitoring the **data signals received by the mobile station from the base station**", as required by Claim 1, OR "monitoring the signal to noise ratio (SNR) of the **data signals received by the mobile station from the base station** to provide a determination whether the mobile station is in a shadow of the base station", as required by Claim 10, OR "monitoring data signal quality **received by the transceiver**", as required by Claim 28.

Moreover, embodiments of the present invention teach disabling the ability of the mobile station to transmit data signals. In contrast, Chang teaches (column 6, lines 34-45) "at step 605, controller 502 advantageously generates a (an audible pre-recorded or synthesized) message that ... directs the user of the mobile terminal to move a short distance ...". Conspicuous by its absence, Chang **does not teach** or allude to disabling the ability of the mobile station to transmit data signals. As such, Chang fails to teach or suggest, "**disabling the ability of the mobile station to transmit data signals** to, while maintaining the ability of the mobile station to receive data signals from, the base station when the mobile station is in a shadow of the base station", as further required by Claim

1, OR "**disabling transmission of data signals from** and maintaining reception of data signals by **the mobile station** when the mobile station is in a shadow of the base station", as further required by Claim 10, OR "**disabling the ability of the transceiver to transmit data signals**, while maintaining the ability of the transceiver to receive data signals when the received signal quality falls below a pre-determined threshold", as further required by Claim 28.

Appellants respectfully point out that Examiner's determination that Chang teaches the above on column 10, lines 7-13 is supposition not supported by fact. Indeed, Chang teaches on column 10, lines 7-13, "... wireless terminal that accepts control messages transmitted by base station in the downlink control message stream and that generates and output pre-recorded or synthesized audible messages ...". Missing from the above is any teaching for, disabling the ability of the mobile station to transmit data signals. Accordingly, Examiner's conclusion that while Chang's audible message is sent to the mobile station, "no data signals are sent from the MS to the BS" is simply erroneous. In all of Chang's specification there is no teaching or suggestion for a cessation of data transmission by the mobile.

Appellants further traverse Examiner's determination that "monitoring the data signal **received** by the mobile station from the base station" (monitoring the downlink channel) is equivalent to Chang's recitation of "Front-end 402 can measure the signal quality of **uplink signal 305** according to any of one or more criteria (e.g. signal-to-noise ratio, absolute power...) (column 4, lines 54-58). Chang clearly teaches that in its system, "two independent, half-duplex communication channels are established between wireless terminal and base station, in well-known fashion" (column 4, lines 28-30). Chang next teaches the definitions of uplink and downlink in column 4, lines 30-36, the

downlink being the "channel (that) carries information from base station to wireless terminal and is called the downlink channel...".

In light of the above it should be clear that Chang does not teach all of the limitations of Claims 1, 10 and 28. Accordingly, the 35 U.S.C. 102(e) rejection is overcome.

Claims 2 and 29-31 stand allowable as depending from allowable claims and including further limitations not taught or suggested by the references of record.

Claim 2 further defines the method according to claim 1 wherein the step of monitoring the data signal received by the mobile station from the base station comprises monitoring the signal to noise ratio (SNR) of the data signal received by the mobile station from the base station to provide a determination whether the mobile station is in a shadow of the base station. Claim 2 is allowable for the same reasons set forth above in support of the allowance of Claim 1.

Claim 29 further defines the method according to claim 28 wherein the received signal quality is defined by SNR. Claim 29 is allowable for the same reasons set forth above in support of the allowance of Claim 28.

Claim 30 further defines the method according to claim 28 wherein the received signal quality is defined as an received signal level. Claim 30 is allowable for the same reasons set forth above in support of the allowance of Claim 28.

Claim 31 further defines the method according to claim 28 wherein the wireless communication transceiver is a cellular handset transceiver. Claim 31 is allowable for the same reasons set forth above in support of the allowance of Claim 28.

2) Claims 3, 5-8, 11-14 and 16-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, Shih-Jeh (U.S. 6,188,890) in view of Rainish et al. (Rainish et al., US 6,606,490). Appellants respectfully traverse this rejection as follows:

Claim 3 further defines the method according to claim 1 wherein the step of monitoring the data signal received by the mobile station from the base station **comprises receiving a control signal from the base station that indicates a loss of primary base station rake fingers to provide a determination whether the mobile station is in a shadow of the base station**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 9, lines 17-21). But even if, arguendo, Rainish teaches "wherein the step of monitoring the data signal received by the mobile station from the base station **comprises receiving a control signal from the base station that indicates a loss of primary base station rake fingers to provide a determination whether the mobile station is in a shadow of the base station**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 1, namely "**disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from**, the base station when the mobile station is in a shadow of the base station".

Examiner goes on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line

21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many time that of its receiver (i.e., not uncommon for there to be a 25x). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 5 further defines the method according to claim 1 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station **is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 2-6). But even if, arguendo, Rainish teaches "wherein the step of disabling transmission of the data signal by the mobile station when the mobile station **is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 1, namely "**disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from**, the base station when the mobile station is in a shadow of the base station". Examiner goes

on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line 21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many time that of its receiver (i.e., not uncommon for there to be a 25x). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 6 further defines the method according to claim 1 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station **is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 7, lines 8-12). But even if, arguendo, Rainish teaches "wherein the step of disabling transmission of the data signal by the mobile station when the mobile station **is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 1,

namely "**disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from**, the base station when the mobile station is in a shadow of the base station". Examiner goes on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line 21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many times that of its receiver (i.e., not uncommon for there to be a 25x difference). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 7 further defines the method according to claim 1 further comprising the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal at a previous power level by the mobile station**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 14-17). But even if, arguendo, Rainish teaches "**enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal at a previous power level by the mobile station**", as suggested by Examiner, Rainish fails to

teach or suggest the previously described deficiency of Chang in respect to Claim 1, namely "**disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from**, the base station when the mobile station is in a shadow of the base station". Examiner goes on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line 21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many times that of its receiver (i.e., not uncommon for there to be a 25x difference). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 8 further defines the method according to claim 7 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises **causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, line 19 – page 11, line 2). But even if, arguendo, Rainish teaches "**causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter**

output power level reaches a previous power level", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 1 (from which Claim 7 depends), namely "**disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from**, the base station when the mobile station is in a shadow of the base station". Examiner goes on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line 21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many times that of its receiver (i.e., not uncommon for there to be a 25x difference). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 11 further defines the method according to claim 10 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 2-6). But even if, arguendo, Rainish teaches "wherein the step of disabling transmission of the data signal by the mobile station when the mobile

station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 10, namely "**disabling transmission of data signals from** and maintaining reception of data signals by **the mobile station** when the mobile station is in a shadow of the base station".

Examiner goes on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line 21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many times that of its receiver (i.e., not uncommon for there to be a 25x difference). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 12 further defines the method according to claim 10 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition**

associated with a previous period of time. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 8-12). But even if, arguendo, Rainish teaches "wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 10, namely "**disabling transmission of data signals from** and maintaining reception of data signals by **the mobile station** when the mobile station is in a shadow of the base station. Examiner goes on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line 21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many times that of its receiver (i.e., not uncommon for there to be a 25x difference). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 13 further defines the method according to claim 10 further comprising the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to**

disabling transmission of the data signal by the mobile station. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 14-17). But even if, arguendo, Rainish teaches "the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 10, namely "**disabling transmission of data signals from** and maintaining reception of data signals by **the mobile station** when the mobile station is in a shadow of the base station. Examiner goes on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line 21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many times that of its receiver (i.e., not uncommon for there to be a 25x difference). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 14 further defines the method according to claim 13 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises **causing a transmitter**

associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, line 19 – page 11, line 2). But even if, arguendo, Rainish teaches "the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises **causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 10 (claim from which Claim 13 depends), namely "**disabling transmission of data signals from** and maintaining reception of data signals by **the mobile station** when the mobile station is in a shadow of the base station. Examiner goes on to suggest that since Rainish actually turns off its receiver, turning off Appellants' transmitter is just an obvious variation of turning off Rainish's receiver – since both are well know power saving techniques (Office action, page 3, line 21 – page 4, line 4). Besides the fact that Examiner has not produced a reference that teaches a mobile station that turns off its transmitter while keeping the receiver on for power savings reasons, Examiner is incorrect in assuming that disabling a receiver would have the same impact on power management as disabling the transmitter as in the present application. In actuality, the power consumption of a mobile station transmitter is many times that of its receiver (i.e., not uncommon for there to be a 25x difference). Thus, it would not be obvious to use a prior art reference that saves power by turning its receiver off and substitute there instead saving power by instead turning off its transmitter, as suggested by Examiner. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Independent Claim 16, as amended, requires and positively recites, a method of data communication between a base station and a mobile station over a wireless communication network, the method comprising the steps of: "transmitting data signals between a mobile station and a base station", "transmitting a signal from the base station to the mobile station that indicates a loss of at least one primary base station rake finger to provide a determination that the mobile station is in a shadow of the base station" and "**disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals** when the mobile station is in a shadow of the base station".

Embodiments of the present invention teach disabling the ability of the mobile station to transmit data signals. In contrast, Chang teaches (column 6, lines 34-45) "at step 605, controller 502 advantageously generates a (an audible pre-recorded or synthesized) message that ... directs the user of the mobile terminal to move a short distance ...". Conspicuous by its absence, Chang **does not teach** or allude to disabling the ability of the mobile station to transmit data signals. As such, Chang fails to teach or suggest, "**disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals** when the mobile station is in a shadow of the base station", as required by Claim 16.

Appellants respectfully point out that Examiner's determination that Chang teaches the above on column 10, lines 7-13 is supposition not supported by fact. Indeed, Chang teaches on column 10, lines 7-13, "... wireless terminal that accepts control messages transmitted by base station in the downlink control message stream and that generates and output pre-recorded or synthesized audible messages ...". Missing from the above is any teaching for, disabling the ability of the mobile station to transmit data signals. Accordingly, Examiner's conclusion that while Chang's audible message is sent

to the mobile station, "no data signals are sent from the MS to the BS" is simply erroneous. In all of Chang's specification there is no teaching or suggestion for a cessation of data transmission by the mobile.

Examiner, however, relies upon Rainish as disclosing the above high-lighted limitation. Appellants respectfully respond that Rainish discloses a battery-powered portable radio receiver and method of operating the battery-powered radio receiver (Abstract, lines 1-2) in which, in contrast to the present invention, **the receiver goes to sleep** during predetermined time periods. In a Standby Mode, a receive path of the radio receiver is activated during a data-detection time interval for the detection of data destined for selected receivers, and a preconditioning time interval for performing pre-conditioning functions with respect to the receiver before the data-detection time interval (Abstract lines 4-9). In the background of the invention, Rainish states:

> In these terminals the Standby mode consists of a **relatively long "sleep" interval in which most of the terminal blocks of the mobile station are deactivated**, and a **relatively short "reception" interval in which the terminal is enabled to receive from the base station transmitted data**, usually a paging or a broadcast message, which may be intended for the terminal. The mobile station checks whether this message is intended for itself, and according to its contests, decides an further actions, like going to the sleep phase ... (col. 1, lines 18-28).

Indeed, Rainish goes on to state in its "description of preferred embodiments of the present invention", that "the present invention overcomes the disadvantages of the prior art, by providing a novel method which reduces the wake up time of the radio section as well as the baseband section" (col. 2, lines 64-67). As such, **Rainish actually turns off its receiver**, whereas the present invention turns off the transmitter portion of the transceiver in the mobile station, but keeps the receiver portion on. Rainish gives a further definition of the sleep mode: "the receiver goes into a sleep mode until the slot beginning (block 580). In

this sleep mode, **all parts of the receiver** (RF parts and base band parts) **can be turned off** except those parts which are needed for waking up the receiver at the slot start (such as a low power counter). Appellants respectfully submit that the Examiner is reading functionality into Rainish's specification that does not exist. As such, Rainish fails to teach or suggest, "**disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals** when the mobile station is in a shadow of the base station", as required by Claim 16. As a result, any combination of Chang and Rainish fails to teach or suggest, "**disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals** when the mobile station is in a shadow of the base station", as required by Claim 16. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

In proceedings before the Patent and Trademark Office, "the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art". In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (citing In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). "The Examiner can satisfy this burden **only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references**", In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)(citing In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988)(citing In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)).

Moreover, **it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious.** In re Gorman, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed.Cir.1991). See also Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed.Cir.1985).

Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). It is clear from the above analysis that the Examiner did not consider all the words of Claim 16, as is required by law.

Claims 17-20 stand allowable as depending from allowable claims and including further limitations not taught or suggested by the references of record.

Claim 17 further defines the method according to claim 16 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 2-6). But even if, arguendo, Rainish teaches "wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 16, namely "**disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals** when the mobile station is in a shadow of the base station". Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 18 further defines the method according to claim 16 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is

in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 8-12). But even if, arguendo, Rainish teaches "wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 16, namely "**disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals** when the mobile station is in a shadow of the base station". Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 19 further defines the method according to claim 16 further comprising the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 14-17). But even if, arguendo, Rainish teaches "the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 16, namely "**disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to**

receive data signals when the mobile station is in a shadow of the base station". Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

Claim 20 further defines the method according to claim 19 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises **causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level**. Examiner admits that Chang fails to teach or suggest the above high-lighted limitation. Examiner, however, relies upon Rainish for this teaching (Office action, page 10, line 19 – page 11, line 2). But even if, arguendo, Rainish teaches "the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises **causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level**", as suggested by Examiner, Rainish fails to teach or suggest the previously described deficiency of Chang in respect to Claim 16 (claim upon which claim 19 depends), namely "**disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals** when the mobile station is in a shadow of the base station". Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is overcome.

3) Claims 4 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, Shih-Jeh (U.S. 6,188,890) in view of Kido, Toru (Kido, US 005977881A). Appellants respectfully traverse this rejection as follows:

Claim 4 further defines the method according to claim 1 further comprises the steps of: "monitoring the delay of the data signal received by the mobile station from the base station" and "**identifying an abrupt change in the delay received by the mobile station from the base station to provide an indication of whether the mobile station is in a shadow of the base station**". Examiner admits that Chang fails to teach or suggest the above high-lighted limitation (Office action, page 11, lines 19-21). Examiner, however, relies upon Kido for this teaching (Office action, page 11, line 21 – page 12, line 3). But even if, arguendo, Kido teaches "**identifying an abrupt change in the delay received by the mobile station from the base station to provide an indication of whether the mobile station is in a shadow of the base station**", as suggested by Examiner, Kido fails to teach or suggest the previously described deficiency of Chang in respect to Claim 1, namely "**disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from**, the base station when the mobile station is in a shadow of the base station".

Appellants respectfully point out that Kido discloses a technique in which its "receiver" is intermittently operated upon moving the receiver out of a coverage zone (col. 3, lines 51-56; col. 4, lines 18-25 & 30-33). As such, Kido alone, or in combination with Chang, fails to teach or suggest, "**disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from**, the base station when the mobile station is in a shadow of the base station", as required by Claim 1 (claim upon which Claim 4 depends).

Appellants further point out that Examiner's explanation of Kido and its application to the above claim limitation is nonsensical. Examiner cites a receiver (Kido) that when it is out of range, shuts sown (sleeps) and 'looks' periodically to determine whether it has returned to an acceptable reception signal, then stays on. Examiner goes on to discuss the aspect of the present claim where when coming out of the fade (at re-start) the transmitter returns to the last known power level (before the fade). Receivers and transmitters, however, are two different components and Examiner does not seem to recognize the difference. Accordingly, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

Independent Claim 22, as amended, requires and positively recites, a method of data communication between a base station and a mobile station over a wireless communication network, the method comprising the steps of: "transmitting data signals between a mobile station and a base station", "monitoring the data signals received by the mobile station from the base station", "detecting an abrupt change in signal delay received by the mobile station from the base station to provide an indication of whether the mobile station is in a shadow of the base station" and "**disabling transmission of the data signals by the mobile station, while maintaining the ability of the mobile station to receive data signals transmitted by the base station**, when the mobile station is in a shadow of the base station".

In contrast, Chang teaches "estimating when a wireless terminal is in a fade by monitoring at the base station the signal quality of the signal transmitted by the wireless terminal (column 2, lines 43-45). The above is in direct contrast to embodiments of the present invention which teach, "monitoring the data signal received by the (mobile)

transceiver". As such, Chang fails to teach or suggest, "monitoring the **data signals received by the mobile station from the base station**", as required by Claim 22.

Moreover, embodiments of the present invention teach disabling the ability of the mobile station to transmit data signals. In contrast, Chang teaches (column 6, lines 34-45) "at step 605, controller 502 advantageously generates a (an audible pre-recorded or synthesized) message that ... directs the user of the mobile terminal to move a short distance ...". Conspicuous by its absence, Chang **does not teach** or allude to disabling the ability of the mobile station to transmit data signals. As such, Chang fails to teach or suggest, "**disabling transmission of the data signals by the mobile station, while maintaining the ability of the mobile station to receive data signals transmitted by the base station**, when the mobile station is in a shadow of the base station", as further required by Claim 22.

Appellants respectfully point out that Examiner's determination that Chang teaches the above on column 10, lines 7-13 is supposition not supported by fact. Indeed, Chang teaches on column 10, lines 7-13, "... wireless terminal that accepts control messages transmitted by base station in the downlink control message stream and that generates and output pre-recorded or synthesized audible messages ...". Missing from the above is any teaching for, disabling the ability of the mobile station to transmit data signals. Accordingly, Examiner's conclusion that while Chang's audible message is sent to the mobile station, "no data signals are sent from the MS to the BS" is simply erroneous. In all of Chang's specification there is no teaching or suggestion for a cessation of data transmission by the mobile.

Appellants further traverse Examiner's determination that "monitoring the data signal **received** by the mobile station from the base station" (monitoring the downlink channel) is equivalent to Chang's recitation of "Front-end 402 can measure the signal

quality of **uplink signal 305** according to any of one or more criteria (e.g. signal-to-noise ratio, absolute power...) (column 4, lines 54-58). Chang clearly teaches that in its system, "two independent, half-duplex communication channels are established between wireless terminal and base station, in well-known fashion" (column 4, lines 28-30). Chang next teaches the definitions of uplink and downlink in column 4, lines 30-36, the downlink being the "channel (that) carries information from base station to wireless terminal and is called the downlink channel...".

Examiner now, however, relies upon Kido for teaching a technique for detecting an abrupt change in signal delay received by the mobile station from the base station to provide an indication of whether or not the mobile station is in a shadow of the base station (Office action, page 8, lines 10-14). But even if, arguendo, Kido teaches the above, as suggested by Examiner, Kido fails to teach or suggest the previously described deficiency of Chang in respect to "**disabling transmission of the data signals by the mobile station, while maintaining the ability of the mobile station to receive data signals transmitted by the base station**, when the mobile station is in a shadow of the base station", as further required by Claim 22.

Appellants further point out that Examiner's explanation of Kido and its application to the above claim limitation is nonsensical. Examiner cites a receiver (Kido) that when it is out of range, shuts sown (sleeps) and 'looks' periodically to determine whether it has returned to an acceptable reception signal, then stays on. Examiner goes on to discuss the aspect of the present claim where when coming out of the fade (at re-start) the transmitter returns to the last known power level (before the fade). Receivers and transmitters, however, are two different components and Examiner does not seem to recognize the difference. Accordingly, any combination of Chang and Kido fails to teach or suggest all

of the limitations of Claim 22. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

4) Claims 23-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, Shih-Jeh (U.S. 6,188,890) in view of Kido, Toru (Kido, US 005977881A) and further in view of Rainish. Appellants respectfully traverse this rejection as follows:

Claim 23 further defines the method according to claim 22 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**. Examiner admits that Chang and Kido fail to teach or suggest the above high-lighted limitation (Office action, page 10, lines 6-7). Examiner, however, relies upon Rainish for this teaching (Office action, page 10, lines 7-11).

Appellants respectfully point out that Rainish discloses a battery-powered portable radio receiver and method of operating the battery-powered radio receiver (Abstract, lines 1-2) in which, in contrast to the present invention, **the receiver goes to sleep** during predetermined time periods. In a Standby Mode, a receive path of the radio receiver is activated during a data-detection time interval for the detection of data destined for selected receivers, and a preconditioning time interval for performing pre-conditioning functions with respect to the receiver before the data-detection time interval (Abstract lines 4-9). In the background of the invention, Rainish states:

> In these terminals the Standby mode consists of a **relatively long "sleep" interval in which most of the terminal blocks of the mobile station are**

> **deactivated**, and a **relatively short "reception" interval in which the terminal is enabled to receive from the base station transmitted data**, usually a paging or a broadcast message, which may be intended for the terminal. The mobile station checks whether this message is intended for itself, and according to its contests, decides an further actions, like going to the sleep phase ... (col. 1, lines 18-28).

Indeed, Rainish goes on to state in its "description of preferred embodiments of the present invention", that "the present invention overcomes the disadvantages of the prior art, by providing a novel method which reduces the wake up time of the radio section as well as the baseband section" (col. 2, lines 64-67). As such, **Rainish actually turns off its receiver**, whereas the present invention turns off the transmitter portion of the transceiver in the mobile station, but keeps the receiver portion on. Rainish gives a further definition of the sleep mode: "the receiver goes into a sleep mode until the slot beginning (block 580). In this sleep mode, **all parts of the receiver** (RF parts and base band parts) **can be turned off** except those parts which are needed for waking up the receiver at the slot start (such as a low power counter). Appellants respectfully submit that the Examiner is reading functionality into Rainish's specification that does not exist. As such, Rainish fails to teach or suggest, "a step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**", as required by Claim 23. As a result, any combination of Chang, Kido and Rainish fails to teach or suggest, "step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises **causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state**", as required by Claim 23. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

Claim 24 further defines the method according to claim 22 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing **a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time**. Examiner admits that Chang and Kido fail to teach or suggest the above high-lighted limitation (Office action, page 13, lines 1-2). Examiner, however, relies upon Rainish for this teaching (Office action, page 13, lines 2-6).

Appellants respectfully point out that Rainish discloses a battery-powered portable radio receiver and method of operating the battery-powered radio receiver (Abstract, lines 1-2) in which, in contrast to the present invention, **the receiver goes to sleep** during predetermined time periods. In a Standby Mode, a receive path of the radio receiver is activated during a data-detection time interval for the detection of data destined for selected receivers, and a preconditioning time interval for performing pre-conditioning functions with respect to the receiver before the data-detection time interval (Abstract lines 4-9). In the background of the invention, Rainish states:

> In these terminals the Standby mode consists of a **relatively long "sleep" interval in which most of the terminal blocks of the mobile station are deactivated**, and a **relatively short "reception" interval in which the terminal is <u>enabled to receive</u> from the base station transmitted data**, usually a paging or a broadcast message, which may be intended for the terminal. The mobile station checks whether this message is intended for itself, and according to its contests, decides an further actions, like going to the sleep phase ... (col. 1, lines 18-28).

Indeed, Rainish goes on to state in its "description of preferred embodiments of the present invention", that "the present invention overcomes the disadvantages of the prior art,

by providing a novel method which reduces the wake up time of the radio section as well as the baseband section" (col. 2, lines 64-67). As such, **Rainish actually turns off its receiver**, whereas the present invention turns off the transmitter portion of the transceiver in the mobile station, but keeps the receiver portion on. Rainish gives a further definition of the sleep mode: "the receiver goes into a sleep mode until the slot beginning (block 580). In this sleep mode, **all parts of the receiver** (RF parts and base band parts) **can be turned off** except those parts which are needed for waking up the receiver at the slot start (such as a low power counter). Appellants respectfully submit that the Examiner is reading functionality into Rainish's specification that does not exist. As such, Rainish fails to teach or suggest, "the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing **a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time**", as required by Claim 24. As a result, any combination of Chang, Kido and Rainish fails to teach or suggest, "the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing **a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time**", as required by Claim 24. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

Claim 25 further defines the method according to claim 22 further comprising the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station**. Examiner admits that Chang and Kido fail to teach or suggest the above high-lighted limitation (Office action, page 13, lines 7-8). Examiner, however, relies upon Rainish for this teaching (Office action, page 13, lines 8-11).

Appellants respectfully point out that Rainish discloses a battery-powered portable radio receiver and method of operating the battery-powered radio receiver (Abstract, lines 1-2) in which, in contrast to the present invention, **the receiver goes to sleep** during predetermined time periods. In a Standby Mode, a receive path of the radio receiver is activated during a data-detection time interval for the detection of data destined for selected receivers, and a preconditioning time interval for performing pre-conditioning functions with respect to the receiver before the data-detection time interval (Abstract lines 4-9). In the background of the invention, Rainish states:

> In these terminals the Standby mode consists of a **relatively long "sleep" interval in which most of the terminal blocks of the mobile station are deactivated**, and a **relatively short "reception" interval in which the terminal is enabled to receive from the base station transmitted data**, usually a paging or a broadcast message, which may be intended for the terminal. The mobile station checks whether this message is intended for itself, and according to its contests, decides an further actions, like going to the sleep phase ... (col. 1, lines 18-28).

Indeed, Rainish goes on to state in its "description of preferred embodiments of the present invention", that "the present invention overcomes the disadvantages of the prior art, by providing a novel method which reduces the wake up time of the radio section as well as the baseband section" (col. 2, lines 64-67). As such, **Rainish actually turns off its receiver**, whereas the present invention turns off the transmitter portion of the transceiver in the mobile station, but keeps the receiver portion on. Rainish gives a further definition of the sleep mode: "the receiver goes into a sleep mode until the slot beginning (block 580). In this sleep mode, **all parts of the receiver** (RF parts and base band parts) **can be turned off** except those parts which are needed for waking up the receiver at the slot start (such as a low power counter). Appellants respectfully submit that the Examiner is reading functionality into Rainish's specification that does not exist. As such, Rainish fails to teach or suggest, "the step of **enabling transmission of the data signal by the mobile station**

when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station", as required by Claim 25. As a result, any combination of Chang, Kido and Rainish fails to teach or suggest, "the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station**", as required by Claim 25. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

Claim 26 further defines the method according to claim 25 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises **causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level**. Examiner admits that Chang and Kido fail to teach or suggest the above high-lighted limitation (Office action, page 13, lines 12-13). Examiner, however, relies upon Rainish for this teaching (Office action, page 13, lines 13-18).

Appellants respectfully point out that Rainish discloses a battery-powered portable radio receiver and method of operating the battery-powered radio receiver (Abstract, lines 1-2) in which, in contrast to the present invention, **the receiver goes to sleep** during predetermined time periods. In a Standby Mode, a receive path of the radio receiver is activated during a data-detection time interval for the detection of data destined for selected receivers, and a preconditioning time interval for performing pre-conditioning functions with respect to the receiver before the data-detection time interval (Abstract lines 4-9). In the background of the invention, Rainish states:

> In these terminals the Standby mode consists of a **relatively long "sleep" interval in which most of the terminal blocks of the mobile station are deactivated**, and a **relatively short "reception" interval in which the terminal is enabled to receive from the base station transmitted data**, usually a paging or a broadcast message, which may be intended for the terminal. The mobile station checks whether this message is intended for itself, and according to its contests, decides an further actions, like going to the sleep phase ... (col. 1, lines 18-28).

Indeed, Rainish goes on to state in its "description of preferred embodiments of the present invention", that "the present invention overcomes the disadvantages of the prior art, by providing a novel method which reduces the wake up time of the radio section as well as the baseband section" (col. 2, lines 64-67). As such, **Rainish actually turns off its receiver**, whereas the present invention turns off the transmitter portion of the transceiver in the mobile station, but keeps the receiver portion on. Rainish gives a further definition of the sleep mode: "the receiver goes into a sleep mode until the slot beginning (block 580). In this sleep mode, **all parts of the receiver** (RF parts and base band parts) **can be turned off** except those parts which are needed for waking up the receiver at the slot start (such as a low power counter). Appellants respectfully submit that the Examiner is reading functionality into Rainish's specification that does not exist. As such, Rainish fails to teach or suggest, "the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises **causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level**", as required by Claim 26. As a result, any combination of Chang, Kido and Rainish fails to teach or suggest, "the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises **causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a**

previous power level", as required by Claim 26. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

5) Claims 9, 15 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, Shih-Jeh (U.S. 6,188,890) in view of Bergins. Appellants respectfully traverse this rejection as follows:

Claim 9 further defines the method according to claim 7 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a maximum power level. Examiner admitted in rejecting Claim 7 (claim upon which Claim 9 depends), that Chang fails to teach or suggest, comprising the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal at a previous power level by the mobile station**. Similarly, Chang fails to teach or suggest, "**disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from**, the base station when the mobile station is in a shadow of the base station", as further required by Claim 1 (claim upon which Claim 7 depends). Accordingly, even if, arguendo, Bergins teaches what is suggested by Examiner, it fails to teach or suggest the above high-lighted deficiencies of Chang. As such, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

Claim 15 further defines the method according to claim 13 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a maximum power level. Examiner admitted in rejecting Claim 13 (claim upon which Claim 15 depends), that Chang fails to teach or suggest, comprising the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station.** Similarly, Chang fails to teach or suggest, "**disabling transmission of data signals from** and maintaining reception of data signals by **the mobile station** when the mobile station is in a shadow of the base station", as further required by Claim 10 (claim upon which Claim 13 depends). Accordingly, even if, arguendo, Bergins teaches what is suggested by Examiner, it fails to teach or suggest the above high-lighted deficiencies of Chang. As such, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

Claim 21 further defines the method according to claim 19 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a maximum power level. Examiner admitted in rejecting Claim 19 (claim upon which Claim 21 depends), that Chang fails to teach or suggest, "the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station**". Similarly, Chang fails to teach or suggest, "**disabling transmission of data signals by the mobile station**

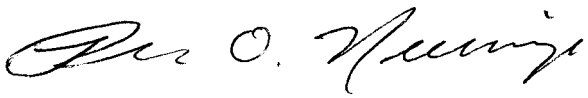
while maintaining the ability of the mobile station to receive data signals when the mobile station is in a shadow of the base station", as further required by Claim 16 (claim upon which Claim 17 depends). Accordingly, even if, arguendo, Bergins teaches what is suggested by Examiner, it fails to teach or suggest the above high-lighted deficiencies of Chang. As such, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

6) Claim 27 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, Shih-Jeh (U.S. 6,188,890) in view of Kido and further in view of Bergins. Appellants respectfully traverse this rejection as follows:

Claim 27 further defines the method according to claim 25 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station **comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a maximum power level**. Examiner admitted in rejecting Claim 25 (claim upon which Claim 27 depends), that Chang and Kido fail to teach or suggest, "the step of **enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station**". Accordingly, even if, arguendo, Bergins teaches what is suggested by Examiner, it fails to teach or suggest the above high-lighted deficiencies of Chang and Kido. As such, no prima facie case of obviousness has been established. The 35 U.S.C. 103(a) rejection is improper and must be reversed.

For the above reasons, favorable consideration of the appeal of the Final Rejection in the above-referenced application, and its reversal, are respectfully requested.

Respectfully submitted,



/Ronald O. Neerings/
Reg. No. 34,227
Attorney for Appellants

TEXAS INSTRUMENTS INCORPORATED
P.O. BOX 655474, M/S 3999
Dallas, Texas 75265
Phone: 972/917-5299
Fax: 972/917-4418

CLAIMS APPENDIX

CLAIMS ON APPEAL:

1. A method of data communication between a base station and a mobile station over a wireless communication network, the method comprising the steps of:

transmitting data signals between a mobile station and a base station;

monitoring the data signals received by the mobile station from the base station; and

disabling the ability of the mobile station to transmit data signals to, while maintaining the ability of the mobile station to receive data signals from, the base station when the mobile station is in a shadow of the base station.

2. The method according to claim 1 wherein the step of monitoring the data signal received by the mobile station from the base station comprises monitoring the signal to noise ratio (SNR) of the data signal received by the mobile station from the base station to provide a determination whether the mobile station is in a shadow of the base station.

3. The method according to claim 1 wherein the step of monitoring the data signal received by the mobile station from the base station comprises receiving a control signal from the base station that indicates a loss of primary base station rake fingers to provide a determination whether the mobile station is in a shadow of the base station.

4. The method according to claim 1 further comprises the steps of:

monitoring the delay of the data signal received by the mobile station from the base station; and

identifying an abrupt change in the delay received by the mobile station from the base station to provide an indication of whether the mobile station is in a shadow of the base station.

5. The method according to claim 1 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state.

6. The method according to claim 1 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time.

7. The method according to claim 1 further comprising the step of enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal at a previous power level by the mobile station.

8. The method according to claim 7 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile

station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level.

9. The method according to claim 7 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a maximum power level.

10. A method of data communication between a base station and a mobile station over a wireless communication network, the method comprising the steps of:

transmitting data signals between a mobile station and a base station;

monitoring the signal to noise ratio (SNR) of the data signals received by the mobile station from the base station to provide a determination whether the mobile station is in a shadow of the base station; and

disabling transmission of data signals from and maintaining reception of data signals by the mobile station when the mobile station is in a shadow of the base station.

11. The method according to claim 10 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state.

12. The method according to claim 10 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time.

13. The method according to claim 10 further comprising the step of enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station.

14. The method according to claim 13 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level.

15. The method according to claim 13 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a maximum power level.

16. A method of data communication between a base station and a mobile station over a wireless communication network, the method comprising the steps of:

transmitting data signals between a mobile station and a base station;

transmitting a signal from the base station to the mobile station that indicates a loss of at least one primary base station rake finger to provide a determination that the mobile station is in a shadow of the base station; and

disabling transmission of data signals by the mobile station while maintaining the ability of the mobile station to receive data signals when the mobile station is in a shadow of the base station.

17. The method according to claim 16 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output until the mobile station transmitter enters an idle (off) state.

18. The method according to claim 16 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time.

19. The method according to claim 16 further comprising the step of enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station.

20. The method according to claim 19 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level.

21. The method according to claim 19 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a maximum power level.

22. A method of data communication between a base station and a mobile station over a wireless communication network, the method comprising the steps of:

transmitting a data signals between a mobile station and a base station;

monitoring the data signals received by the mobile station from the base station;

detecting an abrupt change in signal delay received by the mobile station from the base station to provide an indication of whether the mobile station is in a shadow of the base station; and

disabling transmission of the data signals by the mobile station, while maintaining the ability of the mobile station to receive data signals transmitted by the base station, when the mobile station is in a shadow of the base station.

23. The method according to claim 22 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing a transmitter associated with the mobile

station to ramp down its power output until the mobile station transmitter enters an idle (off) state.

24. The method according to claim 22 wherein the step of disabling transmission of the data signal by the mobile station when the mobile station is in a shadow of the base station comprises causing a transmitter associated with the mobile station to ramp down its power output to achieve a power condition associated with a previous period of time.

25. The method according to claim 22 further comprising the step of enabling transmission of the data signal by the mobile station when the mobile station is no longer in a shadow of the base station and subsequent to disabling transmission of the data signal by the mobile station.

26. The method according to claim 25 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a previous power level.

27. The method according to claim 25 wherein the step of enabling transmission of the data signal by the mobile station subsequent to disabling transmission of the data signal by the mobile station comprises causing a transmitter associated with the mobile station to ramp up its power output until the mobile station transmitter output power level reaches a maximum power level.

28. A method of power management in a wireless communication transceiver comprising the steps of:

monitoring data signal quality received by the transceiver; and

disabling the ability of the transceiver to transmit data signals, while maintaining the ability of the transceiver to receive data signals when the received signal quality falls below a pre-determined threshold.

29. The method according to claim 28 wherein the received signal quality is defined by SNR.

30. The method according to claim 28 wherein the received signal quality is defined as an received signal level.

31. The method according to claim 1 wherein the wireless communication transceiver is a cellular handset transceiver.

RELATED PROCEEDINGS APPENDIX

Appellants are not aware of pending appeals in any related applications.

EVIDENCE APPENDIX

No documents are being submitted with the Appeal Brief.